Therapeutic Hypothermia after Successful Resuscitation from Cardiac Arrest

Target Population(s):

The survivor of prehospital cardiac arrest with VF or pulseless VT is the most appropriate candidate for therapeutic hypothermia; other cardiac arrest rhythms, including PEA, asystole, and survivors of inpatient cardiac arrest, can be considered for therapeutic hypothermia.

Inclusion Criteria– Those patients who MAY benefit from this treatment:

1. Cardiac arrest with return of spontaneous circulation (ROSC)
2. Initial arrest rhythm involving VF or pulseless VT; PEA and asystole can be considered
3. Patients aged >18 years. Women of childbearing age (18-50 years) should not be pregnant
4. Unresponsive after ROSC
5. Endotracheal intubation with mechanical ventilation
6. SBP ≥90 either spontaneously or with fluid and / or infused vasopressors
7. Known time of cardiac arrest (excludes "found down" and / or arrest of unknown duration). Importantly, no limit on duration of resuscitation for pulseless state is suggested; an arrest time, however, of less than 30 minutes is most desirable.

Exclusion Criteria – Those patients who should NOT receive this treatment:

1. Any other reason for coma (e.g., drug overdose, sepsis, head trauma, stroke, overt status epilepticus).
2. Pregnancy
3. Temperature of <30 C after cardiac arrest
4. Unstable blood pressure or rhythm unresponsive to therapy
5. Known, pre-existing coagulopathy or active bleeding
6. A known terminal illness preceding the arrest
7. Do not resuscitate (DNR) code status and patient not intubated as part of resuscitation efforts
8. Known primary respiratory arrest event
9. Pulmonary edema

PROTOCOL

1. **Document Post-resuscitation Neurologic Status** prior to the initiation of patient cooling

2. **Assess Patient for Comfort**: Consider the administration of a narcotic analgesic. (**Call Medical Command**)
3. **Assess Patient for Agitation:** Consider the administration of a sedative agent (**Call Medical Command**)
4. **Consider Chemical Paralysis:** Once sedation has been achieved, consider the administration of a paralytic agent. The administration of a paralytic agent is not necessary in all instances of therapeutic hypothermia and is considered for the patient with excessive movement and / or shivering. (**Call Medical Command**)

5. **Cooling Method**: Choose and apply the most clinically appropriate method(s) depending upon the patient scenario (ice packs, cooling blankets, chilled IV fluid therapy).

-- To expedite the cooling process, 2 liters of cold normal saline are administered rapidly through either a central or peripheral venous catheter
-- Place ice packs to the armpits, neck, torso, groin, and limbs.

6. **Management of Shivering**: Meperidine is agent of choice for the management of shivering; in the adult patient, it is administered intravenously in low dose, ranging from 12.5 mg to 25 mg. Additional therapy for shivering includes chemical paralysis. (**Call Medical Command**)

7. **Cessation of Hypothermia:** Patients with suspected sepsis or other significant infectious event, or who develop hemodynamic or cardiac electrical instability should be withdrawn from the cooling protocol. Other clinical events can warrant cessation of therapeutic hypothermia.